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AF/B 3720

A-71304
ESW

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re application of)
)
ANDREW PERKINS, ET AL.)
)
Serial No. 10/087,897)
)
Filed: March 1, 2002)
)
For: MACHINE AND METHOD FOR INFLATING AND SEALING AIR-FILLED PACKING CUSHIONS)

Examiner: Louis K. Huynh

Art Unit: 3721

CERTIFICATE OF MAILING

I hereby certify that this correspondence, the attached Brief on Appeal (in triplicate) and check in the amount of $330.00 are being deposited with the United States Postal Service as First Class Mail, postage prepaid, in an envelope addressed to: Mail Stop Appeal Briefs - Patents, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on April 5, 2004.

Edward S. Wright

Edward S. Wright

TRANSMITTAL OF APPEAL BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Transmitted herewith (in triplicate) is applicant's Brief on Appeal in this matter.

A check in the amount of $330.00 is enclosed for payment of the Brief on Appeal. The Commissioner is authorized to charge any additional fees or credit any overpayment to Deposit Account No. 50-2975, Order No. A-71304.

Respectfully submitted,

By Edward S. Wright
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:	
ANDREW PERKINS, ET AL.	Examiner: Louis K. Huynh
Serial No. 10/087,897	Group Art Unit: 3721
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For: MACHINE AND METHOD FOR INFLATING AND SEALING AIR-FILLED PACKING CUSHIONS	April 5, 2004

BRIEF ON APPEAL

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REAL PARTY IN INTEREST

The real party in interest is the assignee Free-Flow Packaging International, Inc., a corporation of the State of Delaware, with a place of business in Redwood City, California.

RELATED APPEALS AND INTERFERENCES

None.

STATUS OF CLAIMS

The application was originally filed with Claims 1 - 15, and Claims 16 - 20 were added by an Amendment and Response to Restriction Requirement dated May 27, 2003. Claims 8 - 12 have been withdrawn from consideration, and Claim 1 - 7 and 13 - 20 are on appeal.

STATUS OF AMENDMENTS

No amendments have been filed since the action from which the appeal is taken.

RELATED APPLICATIONS/PATENTS

None.

SUMMARY OF INVENTION

The invention is a machine and method for making air-filled packing cushions from a roll of preconfigured plastic film material. As illustrated in Figure 1 and described at Page 3, line 9 to Page 4, line 8, the material has two layers 12, 13 which are sealed together to form a longitudinally extending inflation channel 19 near one edge of the material, rows of chambers 21, 22 which extend across the material, flow passageways 24 which interconnect the chambers in each of the rows, and inlet passageways which 23 extend between the inlet channel and one of the chambers in each of the rows. The preconfigured film material is wound onto a cylindrical core 27 to form a roll 28.

In the embodiment illustrated in Figures 2 - 6 and described at Page 4, line 9 to Page 7, line 25, the machine is a compact, table top unit which has a relatively small cabinet 31, with a pair of spaced apart, horizontally extending rollers 39, 41 on the upper side of the cabinet for receiving the film material.

A drive mechanism 51, an inflation tube 52 and a sealing assembly 53 are combined into a single modular unit 54 which is located toward the front of the

machine. The drive mechanism includes input rollers 61 - 64 and output rollers 66 - 69 which engage the edge portion of the film material on opposite sides of the inflation channel and feed the material through the machine. Inflation tube 52 is positioned between the inner and outer feed rollers and extends in an upward direction for insertion into the inflation channel of the film material. Sealing assembly 53 is positioned between the input and output rollers and includes a heating element 76 and a roller 77 which presses the film material against the heating element.

As best seen in Figures 4 - 5, the heating element comprises a stainless steel rod 80 of relatively small diameter which extends vertically, so that it is parallel to the direction of film travel and perpendicular to the axis of roller 77. Thus, the curved surfaces of the heating element and the roller come together at a very small point, so that a given point on the film material is in contact with the heating element for only about one millisecond. With that brief contact, higher heating element temperatures can be used, which results in better seals than are possible with the prior art.

In operation, as described at Page 7, line 26 to Page 8, line 28 and best illustrated in Figure 6, the roll of prefabricated film material 28 is placed on rollers 39, 41, with the inflation channel side of the roll 19 abutting against a stop 49, so that the inflation channel itself is aligned with a nip roller 44 and inflation tube 52.

The free end of the film material is pulled down over a guide 86 and onto the inflation tube, with the tube extending into inflation channel 19. The operator continues to pull down on the material until it engages the upper feed rollers and is thereafter fed by the rollers. The air tube serves as a guide for keeping the film material properly aligned with the rollers, and the curvature of the tube helps to guide the material into the rollers.

As the film material travels along the air tube, the air injected through the tube flows through passageways 23, 24 and into chambers 21, 22 in the portion of the film between the roll and the tube, thereby inflating the cushions. The air is confined primarily to this portion of the film by constriction of the inflation channel as it passes around the roll and is pinched closed by nip roller 44. Depending upon the diameter of the roll, the film material is withdrawn from the roll about 90 to 180 degrees from the point where the inflation channel is pinched closed by the roller. With the inflation channel closed down in this manner, the cushions are inflated more efficiently and

more uniformly than in systems where the air diffuses into substantial portions of the film material upstream of the filling and sealing units.

Following inflation, the film material travels through sealing assembly 53 where roller 77 presses the material into direct contact with heating element 76. The two layers of film material are thus fused together along a relatively narrow seal line 89 which extends longitudinally of the film material and across inlet passageways 23 to seal the chambers.

After a cushion is inflated and sealed, the film material travels past a knife (not shown) which slits open the edge of the material next to the inflation channel so the air tube can exit from the channel.

ISSUES

Whether the Examiner has erred in rejecting Claims 1, 4, 7, 16, 17, 19 and 20 under U.S.C. §103 as being unpatentable over Simhaee (U.S. 6,423,166) in view of Skalsky et al. (U.S. 4,936,079).

Whether the Examiner has erred in rejecting Claims 2, 3, 5, 6, 13 and 15 under U.S.C. §103 as being unpatentable over Simhaee in view of Skalsky et al. and further in view of Larson et al. (U.S. 4,017,351).

Whether the Examiner has erred in rejecting Claim 18 under U.S.C. §103 as being unpatentable over Simhaee, Skalsky et al., Larson et al. and Murakami (U.S. 5,581,983).

GROUPING OF CLAIMS

It is not acceptable to applicant to have the two claims stand or fall together within the group in which they have been rejected. Different claims include an different limitations, and the Board could very well find that at least some of the claims are directed to patentable subject matter even if it were to affirm the Examiner's rejection of others.

ARGUMENT

Claims 1, 4, 7, 17, 19 and 20

The references simply do not support the rejections which the Examiner has made. There is no motivation or basis other than applicant's own disclosure and claims for combining the teachings of Simhaee and Skalsky et al. in the manner suggested by the Examiner, and the rejection is a clear example of impermissible hindsight reconstruction. Simhaee and Skalsky et al. are directed to different types

of machines, and Skalsky et al. is not even concerned with air-filled packing materials. Instead, it pertains to a wrapping machine in which the roll of wrapping material is mounted in a manner which permits rotation of the roll to be controlled to maintain proper tension in the material for wrapping purposes. That has nothing to do with the inflation of air-filled packing materials.

In the final action, the Examiner tries to find motivation for the combination in arguing that "supporting a roll of material on a pair of spaced apart rollers is well known for its ability to facilitate material changing". However, that is no more than pure conjecture on the part of the Examiner, and there is no support for it in the references.

Moreover, Claims 1, 4, 7, 16, 17, 19 and 20 further distinguish over the prior art in specifying that the roll of film material rests on the rollers above the inflation tube and that the inflation tube extends in a upward direction for injecting air into the inflation channel and chambers to inflate the cushions, and in calling for means for feeding the material in a generally downward direction from the roll to the inflation tube. That is an important improvement over the prior art in that it provides a very compact machine in which the roll of film material is easily installed and the cushions flow from the machine in a downward direction where they are most easily used or collected. That structural relationship is neither found in nor suggested by the references.

In the final action, when confronted with this important shortcoming of the references, the Examiner makes the preposterous argument that the air injector shown in one of the figures of Simhaee would extend in an upward direction if the page is viewed from the bottom. That, of course, totally fails to consider the structural relation between the position of the roll and the orientation of the injector, and applicant's attorney is shocked that a patent examiner, who is presumed to be competent, would make such a foolish argument.

Claim 1 distinguishes over the teachings of Simhaee and Skalsky et al. in calling for a roll of preconfigured film material, a pair of spaced apart, horizontally extending rollers on which the roll of film material rests, an air injector which is positioned below the rollers and extends in an upward direction for injecting air into the inflation channel and chambers to inflate the cushions, a sealing unit for forming a longitudinally extending seal across the inlet passageways after the cushions are

inflated, and means for feeding the film material in a generally downward direction from the roll past the inflation tube and the sealing unit.

Claim 4 distinguishes over the teachings of the references in calling for a pair of spaced apart, horizontally extending rollers on which the roll of preconfigured film material rests, an air injector which is positioned below the rollers and extends in an upward direction for injecting air into the inflation channel and chambers to inflate the cushions, a sealing unit for forming a longitudinally extending seal across the inlet passageways after the cushions are inflated, and means for feeding the film material in a generally downward direction from the roll past the inflation tube and the sealing unit.

Claim 7 distinguishes over the references in calling for the steps of resting the roll of preconfigured film material on a pair of spaced apart, horizontally extending rollers, feeding the film material from the roll in a downward direction to an air injector which extends in an upward direction and communicates with the inflation channel, introducing air into the chambers through the injector to inflate the cushions, and forming a longitudinally extending seal across the inlet passageways after the cushions are inflated.

Claim 16 which depends from Claim 4 and is directed to patentable subject matter for the same reasons as its parent claim. In addition, it further distinguishes in specifying that the inflation channel is pinched closed by one of the rollers, and the injector is positioned for injecting air into the inflation channel in a portion of the material which has been withdrawn from the roll, with the air in the inflation channel flowing around the roll only to the point where the channel is pinched closed by the roller. There is no such teaching in any of the references, and the Examiner cannot create one by unsupported conjecture about a nonexistent roller in a modified machine that exists only in his head. Moreover, the Examiner is badly mistaken in suggesting that the closing of the inflation channel does not solve any stated problem in the record. That very problem is discussed specifically at Page 8, lines 9 - 20 of applicant's specification:

> As the film material travels along the air tube, the air injected through the tube flows through passageways 23, 24 and into chambers 21, 22 in the portion of the film between the roll and the tube, thereby inflating the cushions. The air is confined primarily to this portion of the film by constriction of the inflation channel as it passes around the roll and is pinched closed by nip roller 44. Depending upon the diameter of the roll, the film material is withdrawn from the roll about 90 to 180

degrees from the point where the inflation channel is pinched closed by the roller. With the inflation channel closed down in this manner, the cushions are inflated more efficiently and more uniformly than in systems where the air diffuses into substantial portions of the film material upstream of the filling and sealing units.

Claim 17 depends from Claim 16 and further distinguishes in specifying that the film material is withdrawn from the roll about 90 to 180 degrees from the point where the inflation channel is pinched closed by the roller.

Claim 19 depends from Claim 7 and distinguishes over the inflation channel is pinched closed by one of the rollers, and air is injected into the inflation channel in a portion of the material which has been withdrawn from the roll, with the air in the inflation channel flowing around the roll only to the point where the channel is pinched closed by the roller. As noted above, the art is devoid of any such teaching.

Claim 20 depends from Claim 19 and further distinguishes in specifying that the film material is withdrawn from the roll about 90 to 180 degrees from the point where the inflation channel is pinched closed by the roller. Here again, there is no such teaching in the references.

Claims 2, 3, 5 and 6

In rejecting Claims 2, 3, 5 and 6 as being unpatentable over Simhaee and Skalsky et al., further in view of Larson et al., the Examiner cites Larson et al. as showing a stainless steel heating element 44 and a wheel 41. However, there appears to be a misunderstanding on the part of the Examiner in that regard because element 44 is a flexible belt and element 41 is a shaft. Even if Larson et al. did show a sealing element and wheel as claimed, it still does not suggest the use of such elements in a machine having the other features of applicant's invention.

Moreover, it should be noted that the claims do not simply call for a stainless steel heating element and a wheel as suggested by the Examiner. Claims 2 and 5 specifically call for a cylindrical heating element, with the axis of the heating element being perpendicular to the axis of the wheel and the heating element being exposed for direct contact with the film material. Claims 3 and 6 further specify that the heating element comprises a stainless steel rod. That structure is not found in the references, either individually or collectively, and it is improper for the Examiner to ignore it as he has done. As discussed in the paragraph bridging pages 6 and 7 of applicant's disclosure, having the stainless steel rod and the pressure wheel oriented at right angles to each other results in a point seal which permits the use of higher

temperatures and results in better seals. It is a significant and unobvious improvement over the prior art.

Claims 13 - 15

Claims 13 - 15 distinguish over the combined teachings of Simhaee, Skalsky et al. and Larson et al. in calling for a cabinet adapted to rest on a relatively small horizontal supporting surface, a pair of spaced apart, horizontally extending rollers on the upper side of the cabinet for receiving the roll of film material in such manner that the roll rests on the rollers, a feed mechanism positioned toward the front of the cabinet for withdrawing the film material from the roll in a downward direction, an inflation tube extending in an upward direction from the feed mechanism and adapted to be received in the inflation channel of the film material that is withdrawn from the roll, a source of air within the cabinet connected to the inflation tube for introducing air into the chambers to inflate the cushions, and a sealing unit for forming a longitudinally extending seal in the film material between the inflation channel and the cushions to close the inlet passageways after the cushions have been inflated. These differences are discussed above in regard to Claims 1, 4 and 7, and are even greater here with the addition of the cabinet and the mounting of the roll on top of the cabinet.

Claims 14 and 15 are directed to the sealing mechanism and further distinguish the invention for the reasons discussed above in connection with Claims 2, 3, 5 and 6.

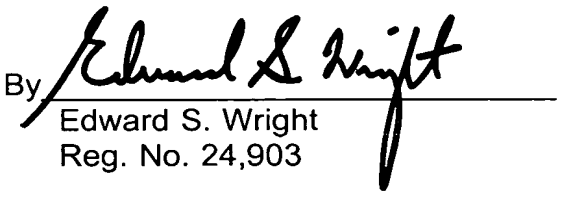
Claim 18

Claim 18 depends from Claim 4 and is directed to patentable subject matter for the same reasons as its amended parent claim and further specifies that the air injector comprises an inflation tube which extends into the inflation channel, and the means for feeding the film material from the roll includes dual feed rollers positioned on opposite sides of the inflation tube for engagement with the film material on opposite sides of the inflation channel.

SUMMARY AND CONCLUSION

It is respectfully submitted that the rejections which the Examiner has made cannot be sustained and that the action of the Examiner should be reversed.

Respectfully submitted,

By 
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The Claims on Appeal

1. In a machine for inflating and sealing air-filled packing cushions:

a roll of prefabricated film material having two layers which are sealed together to form a longitudinally extending inflation channel near one edge of the material, rows of chambers extending across the material, flow passageways interconnecting the chambers in each of the rows, and inlet passageways extending between the inflation channel and one of the chambers in each of the rows;

a pair of spaced apart, horizontally extending rollers on which the roll of film material rests;

an air injector which is connected to a source of air, positioned below the rollers, and extends in an upward direction for injecting air into the inflation channel and chambers to inflate the cushions;

a sealing unit for forming a longitudinally extending seal across the inlet passageways after the cushions are inflated; and

means for feeding the film material in a generally downward direction from the roll past the inflation tube and the sealing unit.

2. The machine of Claim 1 wherein the sealing unit includes a cylindrical heating element and a wheel which are urged together, with the axis of the heating element being perpendicular to the axis of the wheel and the heating element being exposed for direct contact with the film material.

3. The machine of Claim 2 wherein the heating element comprises a stainless steel rod.

4. A machine for making air-filled packing cushions from a roll of prefabricated film material having two layers which are sealed together to form a longitudinally extending inflation channel near one edge of the material, a plurality of chambers to one side of the channel, and inlet passageways extending laterally between the inflation channel and the chambers, comprising:

a pair of spaced apart, horizontally extending rollers on which the roll of film material rests;

an air injector which is connected to a source of air, positioned below the rollers, and extends in an upward direction for injecting air into the inflation channel and chambers to inflate the cushions;

a sealing unit for forming a longitudinally extending seal across the inlet passageways after the cushions are inflated; and

means for feeding the film material in a generally downward direction from the roll past the inflation tube and the sealing unit.

5. The machine of Claim 4 wherein the sealing unit includes a cylindrical heating element and a wheel which are urged together, with the axis of the heating element being perpendicular to the axis of the wheel and the heating element being exposed for direct contact with the film material.

6. The machine of Claim 5 wherein the heating element comprises a stainless steel rod.

7. In a method of making air-filled packing cushions from a roll of prefabricated film material having two layers which are sealed together to form a longitudinally extending inflation channel near one edge of the material, a plurality of chambers to one side of the channel, and inlet passageways extending laterally between the inflation channel and the chambers, the steps of:

resting the roll of film material on a pair of spaced apart, horizontally extending rollers;

feeding the film material from the roll in a downward direction to an air injector which extends in an upward direction and communicates with the inflation channel;

introducing air into the chambers through the injector to inflate the cushions; and

forming a longitudinally extending seal across the inlet passageways after the cushions are inflated.

13. A table-top machine for making air-filled packing cushions from a roll of prefabricated film material having a longitudinally extending inflation channel and a plurality of chambers which communicate with the inflation channel through laterally extending inlet passageways:

a cabinet which is adapted to rest on a relatively small horizontal supporting surface;

a pair of spaced apart, horizontally extending rollers on the upper side of the cabinet for receiving the roll of film material in such manner that the roll rests on the rollers;

a feed mechanism positioned toward the front of the cabinet for withdrawing the film material from the roll in a downward direction;

an inflation tube extending in an upward direction from the feed mechanism and adapted to be received in the inflation channel of the film material that is withdrawn from the roll;

a source of air within the cabinet connected to the inflation tube for introducing air into the chambers to inflate the cushions; and

a sealing unit for forming a longitudinally extending seal in the film material between the inflation channel and the cushions to close the inlet passageways after the cushions have been inflated.

14. The table-top machine of Claim 13 wherein the sealing unit includes a cylindrical heating element and a wheel which are urged together, with the axis of the heating element being perpendicular to the axis of the wheel and the heating element being exposed for direct contact with the film material.

15. The table-top machine of Claim 14 wherein the heating element comprises a stainless steel rod.

16. The machine of Claim 4 wherein the inflation channel is pinched closed by one of the rollers, and the injector is positioned for injecting air into the inflation channel in a portion of the material which has been withdrawn from the roll, with the air in the inflation channel flowing around the roll only to the point where the channel is pinched closed by the roller.

17. The machine of Claim 16 wherein the film material is withdrawn from the roll about 90 to 180 degrees from the point where the inflation channel is pinched closed by the roller.

18. The machine of Claim 4 wherein the air injector comprises an inflation tube which extends into the inflation channel, and the means for feeding the film material from the roll includes dual feed rollers positioned on opposite sides of the inflation tube for engagement with the film material on opposite sides of the inflation channel.

19. The method of Claim 7 wherein the inflation channel is pinched closed by one of the rollers, and air is injected into the inflation channel in a portion of the material which has been withdrawn from the roll, with the air in the inflation channel flowing around the roll only to the point where the channel is pinched closed by the roller.

20. The method of Claim 19 wherein the film material is withdrawn from the roll about 90 to 180 degrees from the point where the inflation channel is pinched closed by the roller.